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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,233	11/14/2003	Don G. Bartell	CML00844T (78933)	2477

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EXAMINER	
CHAU, COREY P	
ART UNIT	PAPER NUMBER
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,233	BARTELL, DON G.	
	Examiner	Art Unit	
	Corey P. Chau	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6 and 8-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-6, and 8-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments on the finality of the rejection of the last Office action are persuasive and, therefore, the finality of that action is vacated. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3-6, 8-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed, does not support the limitations of "an acoustic dampener operably coupled between the first flexible substrate portion and the second flexible substrate portion", wherein the first flexible substrate portion and the second flexible substrate portion are support by ***a*** **flexible substrate** as claimed in claim 1 now. Claims 20 and 25 are rejected for the same reasons stated above. Claims 3-6, 8-19, and 30 depend on a rejected Claim 1. Claims 21-24 depend on a rejected Claim 20. Claims 26-29 depend on a rejected Claim 25.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-5, 8-11 and 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack et al. (hereafter as Hack) in view of U.S. Patent No. U.S. Patent Application Publication No. 2003/0076971 to Sperle et al. (hereafter as Sperle).

6. Regarding Claim 1, Hack discloses an intelligent multi-media display communication system comprising: a flexible substrate having first and second portions (i.e. the display system 106 is fabricated on a flexible substrate, where the first portion can be reads as the portion where the flexible active display is disposed and the second portion can be reads as the portion where the flexible audio transducer is disposed) (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066); a flexible active display (110) supported by the first flexible substrate portion; and a flexible audio transducer (123) proximally disposed with respect to the flexible active display (Fig. 2) and supported by the second flexible substrate portion.

Hack does not expressly disclose an acoustic dampener **operably** coupled between the first flexible substrate portion and the second flexible substrate portion and only partially disposed about the flexible audio transducer to **substantially** fully separate the first portion from the second portion.

Sperle discloses a vibration dampening material placed between a display and loudspeakers in order to limit transmission of vibrations to the display (abstract; Figs. 1-4; page 2, paragraphs 0028 and 0033). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hack with the teaching of Sperle to incorporate a vibration dampening material placed between the flexible display and flexible transducers of Hack in order to limit transmission of vibrations to the flexible display (i.e. an acoustic dampener **operably** coupled between the first flexible substrate portion and the second flexible substrate portion and only partially disposed about the flexible audio transducer to **substantially** fully separate the first portion from the second portion)

7. Regarding Claim 3, Hack as modified discloses comprising at least a second flexible audio transducer (121) proximally disposed with respect to the flexible active display (Fig. 2)

8. Regarding Claim 4, Hack as modified discloses a flexible substrate that supports the flexible active display; and the flexible audio transducer; also supports the at least a second flexible audio transducer (i.e. the display system 106 is fabricated on a flexible substrate) (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066).

9. Regarding Claim 5, Hack as modified discloses a plurality of flexible audio transducers (121,123) disposed substantially equidistant from one another about the flexible active display (Fig. 2).

10. Regarding Claims 8, 9, 10, and 11, Hack as modified discloses a dampener, but does not expressly disclose the dampener comprises a vacuum, or a discontinuous

material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material. However, the Examiner takes Official Notice that it is well know in the art to utilize any known types of dampener such as a vacuum, or a discontinuous material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material in order to have the desired configuration to reduce vibrations. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hack as modified to utilized any known types of dampener such as a vacuum, or a discontinuous material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material in order to have the desired configuration to reduce vibrations.

11. Regarding Claim 17, Hack as modified discloses a selective rigidizer (113) disposed proximal to the flexible audio transducer (i.e. the rod 113 support the display system vertical) (Fig. 2).

12. Regarding Claim 18, Hack as modified discloses a rigid backing disposed at least partially coextensively with the flexible audio transducer (i.e. it is contemplated that the display substrate can be formed from a smart material that is flexible when the display 106 is retracted, but becomes rigid when the display 10 is extended)(page 5, paragraph 0051).

13. Regarding Claim 19, Hack as modified discloses a housing (102) and a retraction mechanism (113) disposed therein that is operably coupled to the flexible active display

and the flexible audio transducer (Figs. 2 and 3A-C; page 5, paragraphs 0056 and 0058).

14. Regarding Claim 20, Hack discloses a method of forming a flexible combined display and speaker apparatus (i.e. intelligent multi-media display communication system)(Fig. 2), comprising: providing a flexible substrate having first and second portions (i.e. the display system 106 is fabricated on a flexible substrate, where the first portion can be reads as the portion where the flexible active display is disposed and the second portion can be reads as the portion where the flexible audio transducer is disposed); supporting a flexible active display (110) with the first flexible substrate portion; supporting a flexible speaker (123) with the second flexible substrate portion (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066).

Hack does not expressly disclose disposing an acoustic dampener between the first flexible substrate portion and the second flexible substrate portion and only partially disposed about the flexible audio transducer to **substantially** fully separate the first portion from the second portion.

Sperle discloses a vibration dampening material placed between a display and loudspeakers in order to limit transmission of vibrations to the display (abstract; Figs. 1-4; page 2, paragraphs 0028 and 0033). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hack with the teaching of Sperle to incorporate a vibration dampening material placed between the flexible display and flexible transducers of Hack in order to limit transmission of vibrations to the flexible display (i.e. an acoustic dampener between the first flexible

substrate portion and the second flexible substrate portion and only partially disposed about the flexible audio transducer to **substantially** fully separate the first portion from the second portion)

15. Regarding Claim 21, Hack as modified discloses temporarily disposing the flexible substrate, and hence the flexible active display and the flexible speaker, in a non-planar configuration (Figs. 3A-C; page 5, paragraphs 0056 and 0058).

16. All elements of Claim 22 are comprehended by Claim 21. Claim 22 is rejected for the reasons stated above apropos to Claim 21.

17. All elements of Claim 23 are comprehended by Claim 21. Claim 23 is rejected for the reasons stated above apropos to Claim 21.

18. Regarding Claim 24, Hack as modified discloses folding the flexible substrate (i.e. alternatively, the display 106 can be formed such that it can be folded like a map and attached to either the interior or exterior of the housing 102) (page 5, paragraph 0056).

19. Regarding Claim 25, Hack discloses an integrated display and speaker (i.e. intelligent multi-media display communication system)(Fig. 2) comprising: flexible display (110) means for selectively providing an active display on a conformably flexible display surface; flexible speaker means (123) integrally configured with respect to the flexible display means for selectively providing audible sound (Fig. 2).

Hack does not expressly disclose an acoustic dampening means **operably** and integrally coupled between the flexible display means and the flexible speaker means

and only partially disposed about the flexible audio transducer to **substantially** fully separate the first portion from the second portion.

Sperle discloses a vibration dampening material placed between a display and loudspeakers in order to limit transmission of vibrations to the display (abstract; Figs. 1-4; page 2, paragraphs 0028 and 0033). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hack with the teaching of Sperle to incorporate a vibration dampening material placed between the flexible display and flexible transducers of Hack in order to limit transmission of vibrations to the flexible display (i.e. an acoustic dampening means **operably** and integrally coupled between the flexible display means and the flexible speaker means and only partially disposed about the flexible audio transducer to **substantially** fully separate the first portion from the second portion).

20. Regarding Claim 30, Hack as modified disclose a speaker 123 (i.e. first flexible audio transducer comprising a speaker) and a speaker 108, which is proximally disposed with respect to the flexible active display (Fig. 2). Hack as modified discloses a speaker 108, but only generally; no specific hardware or software is taught. However it would have been obvious to utilize a speaker such as the thin film speaker 123 as speaker 108, which is thin and flexible, therefore providing a speaker that would not occupy much space (i.e. second flexible audio transducer comprising a speaker). In addition, Hack discloses communication device 100 can also include one or more speakers.

21. Claims 6, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack in view of U.S. Patent No. U.S. Patent Application Publication No. 2003/0076971 to Sperle as applied to claims 1, 3-5, and 17-25 above, and further in view of U.S. Patent Application Publication No. US 2003/0222334 to Ikeda et al. (hereafter as Ikeda).

22. Regarding Claim 6, Hack as modified discloses a flexible active display and a flexible audio transducer on a flexible substrate, but does not expressly disclose the flexible substrate comprises: a first flexible substrate that supports the flexible active display, and a second flexible substrate that supports the flexible audio transducer. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a first and second flexible substrates in order to provide desired structural properties for the flexible active display and the flexible audio transducer, as taught by Ikeda (page 5, paragraph 66). Ikeda disclose the peripheral circuit units are formed on a same semiconductor film 1, but it is also possible to all these peripheral circuit units or a part thereof on dived semiconductor films. In particular, it is preferable to form the solar cell 75, the secondary battery 76, the speaker 78 etc. in a thin film form on another substrate and to peel and combine these components. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Hack in view of Ikeda to provide a first and second flexible substrates in order to provide desired structural properties for the flexible active display and the flexible audio transducer.

23. Regarding Claims 12 and 13, Hack as modified discloses a first and second flexible substrate, but does not expressly discloses the first and second flexible substrate comprising a similar material or difference material. However, the Examiner takes Official Notice that it would have been obvious one having ordinary skill in the art at the time the invention was made to provide the first and second flexible substrate comprising a similar material or difference material in order to provide desired structural properties. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hack as modified to provide the first and second flexible substrate comprising a similar material or difference material in order to provide desired structural properties.

24. Claims 14-16 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack in view of U.S. Patent No. U.S. Patent Application Publication No. 2003/0076971 to Sperle as applied to claims 1, 3-5, and 17-25 above, and further in view of "Electroactive Polymer Artificial Muscles Acoustic Applications", by SRI International (hereafter as SRI International).

25. Regarding Claim 14, Hack as modified discloses a flexible audio transducer (123), wherein the flexible audio transducer is a thin film audio transducer that is thin enough and flexible enough so that the collapsible nature of the display is unaffected, but only generally; no specific hardware is taught. Therefore it would have been obvious to one having ordinary skill in the art to seek known flexible audio transducers. SRI

International for example discloses dielectric elastomer electroactive polymer materials for use in a variety of applications, such as loudspeakers (i.e. audio transducer) comprising films of dielectric elastomer polymer, coated on both sides with a compliant electrode material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ any known flexible speaker, such as that of SRI International. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the flexible speaker of Hack with the teaching of SRI International to utilize a flexible audio transducer comprising films of dielectric elastomer polymer, coated on both sides with a compliant electrode material (i.e. flexible audio transducer is comprised of at least one layer of a dielectric elastomer polymer material).

26. All elements of Claim 15 are comprehended by Claim 14. Claim 15 is rejected for the reasons stated above apropos to Claim 14.

27. All elements of Claim 16 are comprehended by Claim 14. Claim 16 is rejected for the reasons stated above apropos to Claim 14.

28. Claim 26 is essentially similar to Claim 14 and is rejected for the reasons stated above apropos to Claim 14.

29. Claim 27 is essentially similar to Claim 15 and is rejected for the reasons stated above apropos to Claim 15.

30. Claim 28 is essentially similar to Claim 16 and is rejected for the reasons stated above apropos to Claim 16.

31. All elements of Claim 29 are comprehended by Claims 14 and 16. Claim 29 is rejected for the reasons stated above apropos to Claims 14 and 16.

Response to Arguments

32. Applicant's arguments with respect to claim 1, 3-6, and 8-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 6335974 to Kunimoto discloses a speaker system for television receiver with sound ducts and perforated panels.

USPN 6275595 to Lundgren et al. discloses a high performance stereo sound enclosure computer visual display monitor and method for construction.

USPN 6205229 to Park discloses a television having a device for preventing vibration of speaker.

USPN 5920637 to Jeon discloses an audio induced interference suppression apparatus for video display appliances.

USPN 6137890 to Markow discloses a lumped parameter resonator of a piezoelectric speaker.

USPAPN 2003/0059077 to Kambe discloses a mounting structure of speakers box.

USPAPN 2002/0193896 to Bull discloses a speaker apparatus and a computer system incorporating same.

JP 2003-125315 to Koshiishi et al. discloses an image display.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 22, 2007
CPC

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